92. (New) The method of Claim 62 wherein the heat shock protein 70 complexes are complexes in which the heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

93. (New) The method of Claim 65, wherein the heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

94. (New) The ADP-heat shock protein 70-peptide complex of Claim 68, wherein said heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

95. (New) The ADP-heat shock protein 70-protein complex of Claim 82, wherein said heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

REMARKS

Claims 60-69, 71-89, and new claims 90-95 are currently pending. Claims 63, 64, 67, 68, 69, 74, 75, 76, 77, 82, 83, 87, and 88 have been amended, and new claims 90-95 have been added to more particularly point out and distinctly claim the subject matter that Applicant regards as the invention. The claims are completely supported in the specification as filed and no new matter has been added.

Claims 64, 67, 69, and 83, have been amended to correct typographical errors and to be consistent with terminology used in Table 1, at page 35 of Gething *et al.* 1992 *Nature* 355: 33-45, which which is found at page 3 of Applicant's Preliminary Amendment, filed by the Applicant on January 13, 1999, which amended the specification to replace material incorporated by reference with the actual text referred to.

Support for the amendment to claim 63, which now recites a solution that comprises a cell lysate containing heat shock protein 70 complexes, is found at page 25, lines 1-17, and Example 9, of the application as filed.

Support for the amendment to claim 64, which now recites a heat shock protein 70, which is one of the group consisting of DnaK proteins from prokaryotes; Ssa, Ssb,

and Ssc from yeast; hsp70, Grp75 and BiP(Grp78) from eukaryotes, is found at page 16, lines 6 to 24 of the application as filed, and in the first full paragraph at page 11 of the Preliminary Amendment filed by the Applicant on January 13, 1999, which amended the specification to replace material incorporated by reference with the actual text referred to.

Support for the amendments to claims 68 and 82, which now recite substantial purity "as indicated by apparent homogeneity upon electrophoresis in a polyacrylamide gel," is found, *inter alia*, at page 24, lines 35-36, page 25, lines 1-17, page 26, lines 14-20, and page 60, lines 19-21.

Claims 74 and 87 have been amended to recite second "different" organisms, and claims 75 and 88 have been amended to recite second "different" species. These claims have been amended to be more clear.

Support for the amendment to claim 76, which now recites the step of adding a heat shock protein complex comprising a heat shock protein 70 associated with a peptide to an ADP matrix column containing an ADP matrix, is found, *inter alia*, at page 25, lines 10-17, and Example 9, of the application as filed.

Support for the amendment to claim 77, which now recites an ADP-heat shock protein 70-peptide complex synthesized by adding a heat shock protein 70 and a peptide to a buffer containing ADP, is found, in section 5.2.6, and, more specifically, in the paragraphs spanning page 35, line 25 to page 36, line 24, of the application as filed.

Support for new claims 90 to 95, which recite an hsp70 selected from the group consisting of DnaK proteins from prokaryotes, and hsp70, hsc70, and BiP(Grp78) from eukaryotes, is found is found at page 16, lines 6 to 24 of the application as filed, in the first full paragraph at page 11 of the Preliminary Amendment filed by the Applicant on January 13, 1999, which amended the specification to replace material incorporated by reference with the actual text referred to, and in Table 1, at page 35, of Gething *et al.* 1992 *Nature* 355: 33-45, which is found at page 3 of Applicant's Preliminary Amendment, filed on January 13, 1999.

The Claims Are Definite Under
35 U.S.C. § 112, Second Paragraph

Claims 62-69 and 71-89 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Applicant first notes that, with respect to a claim rejection under 35 U.S.C. § 112, second paragraph "it is well established that the determination whether a claim is invalid

as indefinite depends on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the specification," *Amtel Corporation v. Information Storage Devices, Inc.*, 198 F.3d 1374, 1378, 53 USPQ2d 1225, 1227 (Fed. Cir. 1999), (Internal quotation marks and citations omitted). And, more specifically, "[d]etermining whether a claim is definite requires an analysis of whether one skilled in the art would understand the bounds of the claim when read in light of the specification. If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, Section 112 demands no more." *Solomon v. Kimberly-Clark Corporation*, 216 F.3d 1372, 1378, 55 USPQ2d 1279,1282 (Fed. Cir. 2000), (Citations omitted).

A. Claims 62, 63, 65, 78, and 89 are alleged to be indefinite, as not being clear regarding which heat shock complexes are being referred to. The alleged basis for this lack of clarity is the suggestion that the complexes recited could be interpreted to include complexes of heat shock proteins, or heat shock protein peptide complexes, that are bound by other heat shock proteins, *i.e.* heat shock protein multimers.

Applicant respectfully disagrees with the rejection. The meaning of heat shock protein 70 complexes in the rejected claims is clear to the skilled artisan in that the claims specify that the complexes comprise hsp70 associated with peptides or proteins. There is no lack of clarity in the terms hsp70, peptide or protein. These terms have meanings that are well known to the skilled artisan and clear from the instant specification. In particular, the meaning of "protein" would be clear and unambiguous to one skilled in the art, whether or not that protein is a heat shock protein.

One skilled in the art would understand, in light of the specification, that the heat shock protein complexes of the present invention, comprise an hsp70 and a bound antigenic molecule, *i.e.*, a molecule against which a specific immune response is intended. In the case of endogenous complexes, since endogenous mammalian heat shock proteins, *i.e.* self molecules, are not generally known by the skilled artisan to give rise to a specific immune response, that artisan would understand that generally the bound, antigenic protein in endogenous complexes would not be an identical heat shock protein 70, since that protein would generally be known not to be immunogenic in the cell in which it naturally is expressed.

Thus, in the context of the specification as filed, one of skill in the art would understand that the hsp70 complexes of the claims generally are not expected to be hsp70-hsp70 multimers. For example, Applicant notes that the specification, as filed,

explicitly states that the heat shock proteins of the present invention are proteins that are characterized, *inter alia*, by their ability to bind, and to release, other proteins or peptides (page 15, line 36 to page 16, line 2), thereby indicating that multimers of a specific heat shock protein are generally not contemplated by the present application. However, while it is contemplated that generally hsp70 would not be bound to another heat shock protein 70, there is no reason to believe that such could not be the case. Applicant also notes that the claimed complexes can also be formed between a heat shock protein 70 and another antigenic or immunogenic protein, where that bound protein is, for example, a different heat shock protein, or a peptide derived therefrom.

Therefore Applicant respectfully submits that claims 62, 63, 65, 78, and 89 are definite. Accordingly, Applicant respectfully requests that the rejection of claims 62, 63, 65, 78, and 89 under 35 U.S.C. § 112, second paragraph, be withdrawn.

B. Claims 63, 64, 67, 78, and 89 are alleged to be indefinite, as not further limiting the claims upon which they depend. The alleged basis for this rejection is that the claims are broadly drawn to all hsps other than hsp 70.

Claim 63, which depends upon claim 62, has been amended to recite heat shock protein 70 complexes, in order to be properly dependent. Accordingly, Applicant respectfully requests that the rejection of claim 63 as indefinite under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim 64, as amended, and claim 67 both recite a heat shock protein 70 selected from the group consisting of DnaK proteins from prokaryotes; Ssa, Ssb, and Ssc from yeast; hsp70, Grp75, and BiP(Grp78) from eukaryotes. Applicant notes that the specification, as filed (page 15, line 29 to page 17, line 18), and as amended on January 13, 1999, by Applicant, describes heat shock protein 70 as a family of proteins, which includes, *inter alia*, the recited hsp 70 species, all of which are specific heat shock proteins that, based upon their amino acid sequences and/or biochemical properties, are included within the scope of the heat shock protein 70 family.

As would be clear to the skilled artisan, the phrase "heat shock protein 70 " in the rejected claims refers to a family of proteins having defined properties and traits as noted above. Individual heat shock proteins that are encompassed within the heat shock protein 70 family have been isolated from numerous species. Certain individual members of the heat shock protein 70 family, including isolates from eukaryotic sources such as *Drosophila* and

mammals, have been designated "Hsp70" (*see* for example, the terminology used in Table 1, at page 35, of Gething *et al.* 1992 *Nature* 355: 33-45, which is found at page 3 of Applicant's Preliminary Amendment, filed on January 13, 1999). The recitation of "hsp70 from eukaryotes" in claims 64 and 67 is a reference to specific, individual hsp70 proteins that are members of the heat shock protein 70 family. Applicant respectfully submits that the hsp designations recited in claims 64 and 67 are consistent with those used in the art and, therefore, one skilled in that art would be reasonably apprised of the scope of claims 64 and 67. That artisan would understand that claims 64 and 67 recite a particular group of hsp70 species within the heat shock protein 70 family.

Therefore, claims 64 and 67 do further limit the claims upon which they depend. Accordingly, Applicant respectfully submits that claims 64 and 67 are not indefinite, and Applicant respectfully requests that the rejection of claims 64 and 67 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim 62 recites a method for purifying heat shock protein 70 complexes which comprise a heat shock protein 70 associated with at least one member of the group consisting of peptides and proteins. Claim 78, which depends upon claim 62, specifies that the member is a peptide. Therefore claim 78 is narrower in scope than the claim upon which it depends, and, further, claim 78 does not recite any heat shock protein other than a heat shock protein 70 as recited in claim 62. Similarly, claim 89, which also depends upon claim 62, recites that the member is a protein and, further, claim 89 does not recite a heat shock protein other than a heat shock protein 70 as recited in claim 62. Therefore, Applicant respectfully submits that both claim 78 and claim 89 further limit claim 62, upon which both claims depend. Accordingly, Applicant respectfully submits that claim 78 and 89 are not indefinite, and therefore, Applicant respectfully requests that the rejection of claims 78 and 89 under 35 U.S.C. § 112, second paragraph, be withdrawn.

C. Claims 72-75, and 85-88 are rejected under 35 U.S.C. § 112, second paragraph, for the reasons provided on page 2 of the Office Action. It has been alleged in the Office Action that these claims are ambiguous with respect to (a) what is meant by a peptide from the same or different individual, organism, or species, and (b) whether or not the peptide from the indicated individual, organism, or species is bound to hsp 70 *in vivo*.

Claims 72-75 depend upon claim 71, which recites an ADP-heat shock protein-peptide complex made *in vitro*. Similarly, claims 85-88 depend upon claim 84, which recites an ADP-heat shock protein-protein complex made *in vitro*.

Therefore, claims 72-75 recite hsp70-peptide complexes, formed *in vitro*, which comprise a heat shock protein 70 and a peptide, wherein the hsp70 and the bound peptide are both isolated from the same individual (claim 72), are both isolated from different individuals (claim 73), are both isolated from different organisms (claim 74), or are both isolated from different species (claim 75). Similarly, claims 85-88 recite hsp70-protein complexes, formed *in vitro*, which comprise a heat shock protein 70 and a protein, wherein the hsp70 and the bound protein are both isolated from the same individual (claim 85), are both isolated from different individuals (claim 86), are both isolated from different organisms (claim 87), or are both isolated from different species (claim 88).

Applicant notes that Section 5.2.6, which is found on pages 35 to 37 of the application, and is entitled "*In vitro* Production of Stress Protein-Antigenic Molecule Complexes," describes the formation of complexes between heat shock proteins and antigenic molecules, which include, *inter alia*, peptides and proteins. Section 5.2.6 also discloses that the antigenic molecule to be bound may be, for example, a viral, bacterial, or tumor-specific antigen or epitope thereof. Accordingly, one skilled in the art, in light of the specification, would understand that the complexes recited in claims 72-75 are formed from a heat shock protein 70 and a peptide, while the complexes recited in claim 85-88 are formed from a heat shock protein 70 and a protein, where both of these components (*i.e.* the heat shock protein 70 and the peptide or protein) are separately and independently isolated before being combined *in vitro*, to form the complex recited.

Section 5.2.1, which is found on pages 23 to 25 of the application, is entitled "Preparation and Purification of Hsp-70 Complexes," describes a number of methods for the isolation and purification of hsp70-peptide complexes. As described therein, isolated hsp70 complexes can be pretreated with ATP or low pH to remove any peptides that may be associated with the heat shock protein prior to the use of that isolated hsp for forming a complex, *in vitro*, with an antigenic molecule, as described in Section 5.2.6 of the application, at page 36, lines 5 to 7. The specification also teaches that the hsp70 component of the complex may be purified from natural sources or it may be chemically synthesized or recombinantly produced (page 10, lines 7-11; page 15, lines 9-13; and page 17, lines 31-33 of the specification).

The paragraph entitled "Infectious Diseases," which is found at page 29, lines 16-24, describes the use of the methods of Sections 5.2.1 to 5.2.3 (pages 23 to 29 of the application) for the isolation of hsp complexes from cells infected with an infectious organism, where those cells may be, *e.g.* from a cell line or from an infected patient.

Accordingly, one skilled in the art would understand that the hsp70 component of the hsp-peptide/protein complexes made *in vitro*, as recited in claims 72-75, and 85-88, can be isolated from a number of sources, and therefore, is not limited to any one individual, organism, or species.

Section 5.2.4, which is found on pages 29 to 33 of the application, is entitled "Isolation of Antigenic/Immunogenic Components," teaches that antigenic/immunogenic molecules can be isolated from endogenous hsp-complexes as well as MHC-complexes. This section also indicates that these isolated antigens can be chemically identified and then be produced by other means, *e.g.*, chemical synthesis or recombinant expression, and complexed to heat shock proteins *in vitro*. Sections 5.2.4.1, entitled "Peptides From Stress Protein-Peptide Complexes, and 5.2.4.2, entitled "Peptides from MHC-peptide Complexes," describe the isolation and purification of bound peptides from each of these complexes, again without limitation with respect to the source of those complexes. Accordingly, one skilled in the art would appreciate that such hsp-bound or MHC-bound antigens could be isolated from different sources, and therefore would not be limited to any one individual, organism, or species.

Furthermore, the following description is provided on page 10, lines 3-22:

> In a preferred embodiment, the complex is autologous to the individual; that is, the complex is isolated from the cancer cells of the individual himself (e.g., preferably prepared from tumor biopsies of the patient). Alternatively, the hsp and or the antigenic molecule can be isolated from the individual or from others or by recombinant production methods using a closed hsp originally derived from the individual or from others. "Antigenic molecule" as used herein refers to the peptides with which the hsps are endogenously associated in vivo (e.g., in precancerous or cancerous tissue), as well as exogenous antigens/immunogens (i.e., with which the hsps are not complexed in vivo) or antigenic/immunogenic fragments and derivatives thereof. Such exogenous antigens and fragments and derivatives (both peptide and non-peptide) thereof for use in complexing with hsps, can be selected from among those known in the art, as well as those readily identified by standard immunoassays known in the art by detecting the ability to bind antibody or MHC molecules (antigenicity) or generate immune response (immunogenicity).

Accordingly, one skilled in the art would understand, in light of the specification, that the antigenic molecules (*i.e.* the peptides of claim 72-75, and the proteins of claim 85-88) that can be used, *in vitro*, to form the hsp70-peptide and hsp70-protein complexes recited in claims 72-75, and 85-88, respectively, are not limited to those antigenic molecules isolated from hsp and MHC complexes, and could be *inter alia* peptide and protein exogenous antigens/immunogens.

The specification teaches that the components of the hsp70 complexes of claims 72 and 85, which are an hsp70 and a bound peptide (claim 72), or an hsp70 and a bound protein (claim 85), may each be independently isolated from the same individual, as, for example, in autologous preparations. Therefore one skilled in the art would understand, in light of the specification, that hsp70-peptide and hsp70-protein complexes can be formed *in vitro*, where both the hsp70 and the bound peptide (claim 72), or the hsp70 and the bound protein (claim 85), are isolated from the same individual.

Accordingly, Applicant respectfully submits that claims 72 and 85 are not indefinite and therefore, Applicant respectfully requests that the rejection of claims 72 and 85, under 35 U.S.C. § 112, second paragraph, be withdrawn.

In light of the specification, one skilled in the art would also understand that hsp-70 peptide complexes can be formed *in vitro* wherein the hsp70 and the peptide components are isolated independently of one another, without limitation, from any individual, organism, or species. One skilled in the art would also understand that hsp-70 protein complexes can be formed *in vitro* wherein the hsp70 and the antigenic protein component are isolated independently of one another, without limitation, from any individual, organism, or species. Accordingly, one skilled in the art would also understand that the bound antigenic molecule, which may be a protein or a peptide, can but need not be isolated from an hsp70 complex or MHC complex *in vivo*. Therefore, it would be readily understood by the skilled artisan that each of the components of the complexes can be isolated from different individuals, organisms or species. Accordingly, Applicant respectfully submits that claims 73-75 and 86-88 are not indefinite and therefore, Applicant respectfully requests that the rejection of claims 72 and 85, under 35 U.S.C. § 112, second paragraph, be withdrawn.

D. Claims 76 and 77 are rejected as indefinite under 35 U.S.C. § 112, second paragraph for the reasons provided on page 3 of the Office Action. The alleged basis for this rejection is that it is not clear how the HSP-70 peptide complexes are separated from the heat

shock protein 70-protein complexes which will also presumably be formed in the method used, since the claims are drawn to the ADP-hsp70-peptide complex only.

In response, Applicant notes that claims 76 and 77 have been amended to recite, respectively, adding "a heat shock protein 70 associated with a peptide" to the column and "adding a heat shock protein 70 and a peptide" to the buffer. Applicant respectfully submits that claims 76 and 77, as amended to more particularly point out and distinctly claim his invention, are not unclear since the alleged confusion regarding isolation of the hsp-70 peptide complexes has been obviated by the amendments. Therefore Applicant respectfully submits that claims 76 and 77 are not indefinite, and accordingly, Applicant respectfully requests that the rejection of claims 76 and 77 under 35 U.S.C. § 112, second paragraph, be withdrawn.

E. Claims 68 and 82 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite. The alleged basis for this lack of clarity is the suggestion that the metes and bounds of "substantially" are not clear in claims 68 and 82.

In response, Applicant respectfully points out that the claims have been amended to recite the meaning of "substantially purified" in that claims 68 and 82 now recite "substantially purified form as indicated by apparent homogeneity upon electrophoresis in a polyacrylamide gel." The meaning of the amended phrase would be clear to the skilled artisan in light of the specification and knowledge well known in the art. In particular, the Examiner is directed to page 26, lines 14-20, page 60, line 20, and Figure 1A wherein the specification teaches the use of polyacrylamide gel electrophoresis to show substantial purity as indicated by apparent homogeneity of hsp-peptide complexes. Thus Applicant submits that the metes and bounds of the term "substantially," as used in claims 68 and 82, as amended, are clear to one skilled in the art. Accordingly, Applicant respectfully submits that claims 68 and 82 are not indefinite and, therefore, Applicant respectfully requests that the rejection of claims 68 and 82 under 35 U.S.C. § 112, second paragraph, be withdrawn.

FURTHER REMARKS

Applicant notes that the first page of the Office Action Summary indicates that claims 60 and 61 are again rejected although no basis for this rejection has been provided in either of the Office Actions mailed on October 14, 1999, or on July 5, 2000. Applicant, again, respectfully requests clarification of this discrepancy.

Applicant also respectfully requests that a copy of each of the Lists of References Cited, which were filed on October 7, 1999, and April 14, 2000, be initialed by the Examiner and returned to Applicant's attorneys.

CONCLUSION

Applicant respectfully requests that the amendments and remarks of the present response be entered and made of record in the instant application. Claims 60-69 and 71-89, fully meet all statutory requirements for patentability and, therefore, Applicant respectfully requests that the Examiner's rejections be withdrawn.

Applicant submits that the application is now in condition for allowance, early notice of which would be appreciated. Should the Examiner not agree with the Applicant's position, the Examiner is respectfully requested to telephone the undersigned.

Respectfully submitted,

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Date: January 5, 2001

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APPENDIX A

60. A method of purifying heat shock protein-70 peptide complexes from a cell comprising:

(a) homogenizing the cell with a hypotonic buffer solution to produce a cell lysate;

(b) centrifuging the cell lysate to obtain a supernatant;

(c) running the supernatant over an ADP-agarose column;

(d) washing the ADP-agarose column with a buffer containing ADP; and

(e) collecting the heat shock protein 70-peptide complexes.

61. A method of purifying heat shock protein-70 peptide complexes comprising:

(a) contacting a sample containing cellular proteins with a nonhydrolyzable analog of ATP affixed to a solid substrate under conditions such that heat shock protein 70 in the sample can bind to the nonhydrolyzable analog of ATP; and

(b) eluting the heat shock protein 70 bound to the nonhydrolyzable analog of ATP in step (a).

62. A method for purifying heat shock protein 70 complexes comprising the steps of:

adding a solution containing a heat shock protein 70 complex comprising a heat shock protein 70 associated with at least one member of the group consisting of peptides and proteins, to an ADP matrix column containing an ADP matrix to bind the heat shock protein 70 complexes to the ADP matrix; and

adding a buffer containing ADP to the column to remove the heat shock protein 70 complexes in an elution product.

63. The method of Claim 62 wherein the solution containing heat shock protein 70 complexes comprises a cell lysate.

64. The method of Claim 62 wherein the heat shock protein 70 complexes comprise complexes in which the heat shock protein 70 comprises one of the group consisting of DnaK proteins from prokaryotes; Ssa, Ssb, and Ssc from yeast; hsp70, Grp75 and BiP(Grp78) from eukaryotes.

65. A method for synthesizing heat shock protein 70 complexes, comprising adding a heat shock protein 70 and an antigenic molecule selected from the group consisting of peptides and proteins, to a buffer containing ADP to allow the heat shock protein 70 to bind to the antigenic molecule and ADP to form a heat shock protein 70 complex.

66. The method of Claim 65, wherein the solution containing the heat shock protein 70, antigenic molecule and ADP is incubated at 37° C to induce heat shock protein 70 present in the solution to bind to peptides and proteins present in the solution to form heat shock protein 70 complexes.

67. The method of Claim 65, wherein the heat shock protein 70 comprises one of the group consisting of DnaK proteins from prokaryotes; Ssa, Ssb, and Ssc from yeast; hsp70, Grp75 and BiP(Grp78) from eukaryotes.

68. An ADP-heat shock protein 70-peptide complex in substantially purified form as indicated by apparent homogeneity upon electrophoresis in a polyacrylamide gel.

69. The ADP-heat shock protein 70-peptide complex of Claim 68, wherein said heat shock protein 70 comprises one of the group consisting of DnaK proteins from prokaryotes; Ssa, Ssb, and Ssc from yeast; hsp70, Grp75 and BiP(Grp78) from eukaryotes.

70. Canceled

71. The ADP-heat shock protein 70-peptide complex of Claim 68, wherein said ADP-heat shock protein 70-peptide complex comprises a heat shock protein70-peptide complex made in vitro.

72. The ADP-heat shock protein 70-peptide complex of Claim 71, wherein said heat shock protein 70-peptide complex comprises a heat shock protein 70 and a peptide from the same individual.

73. The ADP-heat shock protein 70-peptide complex of Claim 71, wherein said heat shock protein 70-peptide complex comprises a heat shock protein 70 from a first individual and a peptide from a second, different individual.

74. The ADP-heat shock protein 70-peptide complex of Claim 71, wherein said heat shock protein 70-peptide complex comprises a heat shock protein 70 from a first organism and a peptide from a second, different organism.

75. The ADP-heat shock protein 70-peptide complex of Claim 71, wherein said heat shock protein 70-peptide complex comprises a heat shock protein 70 from a first species and a peptide from a second, different species.

76. The ADP-heat shock protein 70-peptide complex of Claim 68, wherein the ADP-heat shock protein 70-peptide complex is purified by the steps of:

adding a heat shock protein complex comprising a heat shock protein 70 associated with a peptide to an ADP matrix column containing an ADP matrix to bind the heat shock protein 70 complexes to the ADP matrix; and

adding a buffer containing ADP to the column to remove the heat shock protein 70-peptide complexes in an elution product.

77. The ADP-heat shock protein 70-peptide complex of Claim 68, wherein the ADP-heat shock protein 70-peptide complex is synthesized by adding a heat shock protein 70 and a peptide to a buffer containing ADP to allow the heat shock protein 70 to bind to the antigenic molecule and ADP to form a heat shock protein 70 complex.

78. The method of claim 62, wherein said member is a peptide.

79. The method of claim 65, wherein the antigenic molecule is a peptide.

80. The method of Claim 65, wherein the antigenic molecule is a peptide, and wherein the solution containing the heat shock protein 70, peptide and ADP is incubated at 37°C to induce heat shock protein 70 present in the solution to bind to the peptide present in the solution to form heat shock protein 70-peptide complexes.

81. The method of claim 76, wherein said member is a peptide.

82. An ADP-heat shock protein 70-protein complex in substantially purified form as indicated by apparent homogeneity upon electrophoresis in a polyacrylamide gel.

83. The ADP-heat shock protein 70-protein complex of Claim 82, wherein said heat shock protein 70 comprises one of the group consisting of DnaK proteins from prokaryotes; Ssa, Ssb, and Ssc from yeast; hsp70, Grp75 and BiP(Grp78) from eukaryotes.

84. The ADP-heat shock protein 70-protein complex of Claim 83, wherein said ADP-heat shock protein 70-protein complex comprises a heat shock protein70-protein complex made in vitro.

85. The ADP-heat shock protein 70-protein complex of Claim 84, wherein said heat shock protein 70-protein complex comprises a heat shock protein 70 and a protein from the same individual.

86. The ADP-heat shock protein 70-protein complex of Claim 84, wherein said heat shock protein 70-protein complex comprises a heat shock protein 70 from a first individual and a protein from a second, different individual.

87. The ADP-heat shock protein 70-protein complex of Claim 84, wherein said heat shock protein 70-protein complex comprises a heat shock protein 70 from a first organism and a protein from a second, different organism.

88. The ADP-heat shock protein 70-protein complex of Claim 84, wherein said heat shock protein 70-protein complex comprises a heat shock protein 70 from a first species and a protein from a second, different species.

89. The method of claim 62, wherein said member is a protein, wherein the heat shock protein 70 complex comprises a heat shock protein 70 associated with a protein, and wherein the heat shock protein 70-protein complex is made in vitro.

90. The method of Claim 60, wherein the heat shock protein-70 peptide complexes comprise complexes in which the heat shock protein 70 is selected from the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

91. The method of Claim 61, wherein the heat shock protein-70 peptide complexes comprise complexes in which the heat shock protein 70 is selected from the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

92. The method of Claim 62 wherein the heat shock protein 70 complexes include complexes in which the heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

93. The method of Claim 65, wherein the heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

94. The ADP-heat shock protein 70-peptide complex of Claim 68, wherein said heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.

95. The ADP-heat shock protein 70-protein complex of Claim 82, wherein said heat shock protein 70 comprises one of the group consisting of a DnaK protein from a prokaryote; and hsp70(p73), hsc70(p72), and BiP(Grp78) from a eukaryote.